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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,844	07/25/2003	Jinhun Joung	2003P07969 US	2648

7590 07/23/2008  
Elsa Keller  
Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830

EXAMINER
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MALEVIC, DJURA

ART UNIT	PAPER NUMBER
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2884

MAIL DATE	DELIVERY MODE
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07/23/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/627,844	JOUNG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	DJURA MALEVIC	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/08/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |



### **DETAILED ACTION**

In view of the Supplemental Appeal Brief filed on 05/12/2008, PROSECUTION IS HEREBY REOPENED. See detailed action set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) File a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

Notice, the examiner has rearticulated the pervious rejection for clarity in anticipation of an appeal. Accordingly, the examiner has not acquiesced that the previous references fails to teach, in combination, the recited claims but for clarity has rearticulated the rejection.

### **Response to Arguments**

Applicant's arguments see Appeal Brief filed on 05/12/2008 with respect to the rejection(s) of claim(s) claims 1 - 28 have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made (See below).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 7, 10 – 16, 19 -25 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Soluri et al. (US 2002/0175289) in view of Hase et al. (US Patent 5,099,134) and Nishiki (US Patent 4,725,734).

With regards to claims 1, 10, 19 and 28, Soluri discloses a scintigraphic device (Figures 1 -8), comprising: a collimator device 1 including a grid of collimation square holes (figure 2) formed by a plurality of sheets arranged in a grid pattern [0037]; and pixilated scintillators 20 individually located in each of said collimation square holes; and a detector 3 coupled to said pixilated scintillators and operable to detect radiation emanating from an object and interacting with said scintillators after passing through said collimator device [0031 -0032].

Soluri fails to expressly disclose the method and/or the specifics of producing the collimator, for example, each of said sheets having evenly spaced slots into which other sheets are inserted. Hase shows that a collimator having plates with a number of

through holes formed side by side, each hole for guiding and inserting a plurality of plates is known (Figures 1, 2, 6, 11 and 14). Hase further teaches that the method of making such a collimator improves sensitivity, resolution and manufacturing yields (Col. 1, Lines 45 -52). In view of the utility in containing a collimator with such characteristics, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the collimator disclosed in Soluri be made such as that taught by Hase.

Additionally, Soluri discloses coating the scintillation crystals with an optical reflecting material [0038], but fails to teach said optical reflective material coating at least a portion of the surfaces of said sheets forming said grid of said collimation square holes. Notice, collimators comprising a coating of an optical reflective material is well known and conventionally used in the art. For instance, one of ordinary skill in the art may look to Nishiki, who shows it is known to have a collimator comprising plates where said plates are coated on both sides with a highly efficient reflector to reflect light beams generated from the scintillating element (Col. 3, Lines 55 – 58). Therefore, one of ordinary skill in the art would have recognized at the time the invention was made that the capabilities or the function of the combination would be predictable. Thus, the selection of an optical reflective material coating a scintillator crystal or coating a collimator represents an obvious choice within ordinary skill of the art, i.e., a choice between known viable alternatives (see KSR, 82 USPQ2d at 1396). Therefore, a collimator comprising a coating of an optical reflective material would have been recognized.

With regards to claims 2, 11 and 20, Soluri modified discloses a collimator comprising optically reflecting material (See rejection of claim 1), which maximizes light intensity of pixilated scintillators events.

With regards to claims 3, 12 and 21, Soluri discloses said scintillators are scintillation crystals [0034].

With regards to claims 4, 13 and 22, Soluri modified discloses pixilated scintillators comprising square-shaped configuration [0037] (figure 2).

With regards to claims 5, 14 and 23, Soluri modified discloses said plurality of sheets is formed of a material having a high density [0033].

With regards to claims 6, 15 and 24, Soluri modified discloses said high-density material is tungsten [0033].

With regards to claims 7, 16 and 25, Soluri modified discloses said high-density material is lead [0033].

Claims 8, 9, 17, 18, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Soluri, Hase and Nishiki in view of Melscher et al. (US Patent 5,961,714).

With regards to claims 8, 9, 17, 18, 26 and 27, Soluri modified discloses the use of an optical reflecting material (i.e., the disclosure of Nishiki), however Soluri modified does not disclose using exclusively  $\text{TiO}_2$  or  $\text{MgO}$  as the reflecting material. It would have been obvious to include  $\text{TiO}_2$  and  $\text{MgO}$  as the reflecting material, since it is conventionally used in that environment and would make the reflectance more efficient in view of what is old and well known in the art. For instance, Melscher et al. shows it is

known to use  $\text{TiO}_2$  and  $\text{MgO}$  as a reflecting material. Thus, the selection of the reflective material represents an obvious choice within ordinary skill of the art, i.e., a choice between known viable alternatives (see KSR, 82 USPQ2d at 1396). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the collimator disclosed in Soluri be made comprising the reflecting materials of  $\text{TiO}_2$  or  $\text{MgO}$ , such as that taught by Melscher.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cusano, GB 2034148 A, show that a collimator comprising walls are preferably coated with light reflective material and further said light reflective surfaces being translucent to gamma photons may be provided in channels. The collimator further comprising scintillators which may be a single crystal. **Thus, disclosing that a collimator comprising a single scintillator in a hole wherein the walls of said collimator and further comprising an optical reflective coating (i.e., magnesium oxide) is known.**

Schmand et al. (US pub. 2004/0140431) discloses a grid array, adapted to receive a plurality of scintillators used in association with an imaging device. Also, Cusano (US Patent 4,187,427) teaches a structure for collimated scintillation detectors using optically reflective material liked magnesium oxide. Barium sulfate...etc.



Andreaco (US Pub. 20040159792) [0068], Schmand et al. (US Pub. 20040140431 [0031] and Jiang et al. (US Patent 7,308,074) all teach the claimed reflective materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DJURA MALEVIC whose telephone number is 571.272.5975. The examiner can normally be reached on Monday - Friday between 8:30am and 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571.272.2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

***Djura Malevic***  
***Patent Examiner***  
***GAU 2884***

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**571.272.5975**

/David P. Porta/

Supervisory Patent Examiner, Art Unit 2884